

Weilun Sun

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Homepage

<http://sunweilun.github.com>

EDUCATION

Bachelor of Science

2010 – 2014 (expected)

Computer Science & Technology
Tsinghua University, Beijing, China
Overall GPA: 88/100

Official Overall Ranking: #21 out of 100 students

RESEARCH EXPERIENCE

Anisotropic Spherical Gaussians

February – May 2013

SIGGRAPH Asia 2013 Technical Paper
Graphics & Geometry Computing Group, TNList, Tsinghua University
Mentor: [Dr. Kun Xu](#)

- Investigated the form of Anisotropic Spherical Gaussian (ASG for short).
- Implemented a *Precomputed Radiance Transfer* rendering program based on theories in the paper.
- Proofread derivation of the closed form integral and the convolution expression of ASGs.
- Made most of result figures in the paper.

Sketch2Scene

September 2012 – January 2013

SIGGRAPH 2013 Technical Paper
Graphics & Geometry Computing Group, TNList, Tsinghua University
Mentor: [Dr. Kun Xu](#)

- Reproduced a single-model retriever based on paper [Sketch-based Shape Retrieval](#) of SIGGRAPH 2012.
- Implemented part of the GUI of the project system.
- Discussed the co-retrieval methods in the paper.
- Provided the co-arrangement algorithm in the paper.

Graduation Project of Yan Gu (second year PhD candidate at CMU now) March – May 2012

Student Research Training Program
Graphics & Geometry Computing Group, TNList, Tsinghua University
Mentor: [Dr. Kun Xu](#)

- Reproduced main algorithms of SIGGRAPH Asia 2009 paper *All-Frequency Rendering of Dynamic, Spatial-Varying Reflectance*.

PUBLICATIONS

- “Anisotropic Spherical Gaussians,”
Proceedings of SIGGRAPH Asia 2013, ACM Transactions on Graphics 32(6), 209:1 - 209:11, 2013.
[Kun Xu](#), [Wei-Lun Sun](#), [Zhao Dong](#), Dan-Yong Zhao, Run-Dong Wu, [Shi-Min Hu](#)
- “Sketch2Scene: Sketch-based Co-retrieval and Co-placement of 3D Models,”
Proceedings of SIGGRAPH 2013, ACM Transactions on Graphics 32(4), 123:1–123:12, 2013.
[Kun Xu](#), Kang Chen, [Hong-Bo Fu](#), [Wei-Lun Sun](#), [Shi-Min Hu](#)

SMALL PROJECTS

Experiment of Clustering Methods

May 2013

Course Project of Introduction to Machine Learning

- Replaced k-means clustering used in paper *Sketch-Based Shape Retrieval* with different clustering methods including k-medoids and fitting Spherical Gaussians with EM algorithm.
- Derived approximate formulas needed to fit Spherical Gaussians with EM algorithm.
- Made simple comparisons among different methods by statistical and retrieval results.
- Rearranged code written for *Sketch2Scene* and implemented a complete software with GUI.

Simple 3D rigid body physics engine

January 11th – January 13th 2013

Course Project of Computer Graphics Real Time and Animation

- Implemented rigid body collision simulation between sphere and net or fixed objects in any shape with friction under gravity field.
- Took spinning into consideration.
- Simulated net system using rigid body spheres to represent knots and weightless stiff springs to represent cords.
- Created a basketball shooting game using the engine.(Cooperated with my classmate Yi-Ning Liu)

Fantastic Drummer

October – December 2012

Course Project of The Principles of Signal Processing

With Classmate Iat Chong Chan and Yi-Ning Liu

- Leader of the group.
- Implemented drum sound extraction and classification algorithm by Matlab.
- Implemented a game like Taiko no Tatsujin on ios, but can turn any given song into playable game level.
- Came up with the idea.

COMPUTER SKILLS

Programming Languages: c/c++, Java, Python, Matlab

Softwares & Applications: OPENCV, OPENGL, GLSL, QT, FLTK, Android, CUDA

Operating Systems: Windows, Linux

HONORS

2nd Place of Tsinghua Talent Show

2012

- Performed street soccer on stage.

First Prize of Beijing University Physics Olympiads

2011

INTERESTS

Street Soccer, Soccer (Midfielder of CST Department Soccer Team of Tsinghua University)